Budgeting

A. Multiple Choice: Circle the best answer. Indicate your second choice with a square.  

1. Partial budgets include only:
   a. cash costs
   b. noncash costs
   c. fixed costs
   d. costs that would vary if a certain action is taken

2. The “Law of Diminishing Marginal Returns” means that as the level of input is increased:
   a. the product selling price decreases
   b. product increases faster than input
   c. product increases in the same proportion as input
   d. product increases slower than input

3. Profits will no longer be increased (or losses decreased) by carrying out an enterprise when the selling price is below the:
   a. variable cost per unit
   b. fixed cost per unit
   c. total cost per unit
   d. opportunity cost per unit

4. When developing a whole farm budget that includes a major change such as buying more land, the selling prices used should be:
   a. those expected for the next crop
   b. those received for the last crop
   c. long-run average prices
   d. current prices on the day the budget is developed

5. When calculating the breakeven selling price to cover total costs in an enterprise budget, we first subtract:
   a. income from sources other than the primary product
   b. variable costs
   c. fixed costs
   d. opportunity costs

6. When calculating an appropriate land charge for a crop enterprise budget, we can use any of the following except:
   a. a typical cash rent cost for similar land
   b. a typical selling price for similar land
   c. an opportunity cost rate of return times the typical selling price for similar land, plus property taxes and upkeep costs
   d. net cost of a typical crop-share lease
7. A cash flow budget is most useful for evaluating the __________ of a farm business
   a. solvency
   b. profitability
   c. efficiency
   d. liquidity

8. When choosing a set of enterprises to include in a whole farm budget,
   a. each enterprise should be considered to be independent of the others
   b. rotational effects on yields and pest control need to be considered
   c. it is usually not profitable to combine crops and livestock
   d. fixed costs per unit should be multiplied by the number of units planned for each enterprise.

B. Answer as indicated.

9. A severe drought has hurt your growing corn. Grain yield will probably be low. Your neighbor offers to pay you $150 per acre to let him harvest your corn for silage. In deciding whether to accept his offer or harvest it yourself with your own grain combine, which of the following costs and returns should be considered? (Circle all correct answers. More than one answer may be correct.)

   a. price you would expect to receive for selling corn as grain
   b. your seed cost for this crop
   c. extra fertilizer cost for next year for removing the crop as silage instead of corn
   d. fuel and lube costs for your combine
   e. property taxes on your land
   f. ownership costs for your grain bins

10. Indicate which of the following items would be included in a cash flow budget. Circle all correct answers.
    (2 each)
    a. value of the farmer’s own unpaid labor
    b. a loan to be taken out for purchase of feeder livestock
    c. government program payments to be received
    d. sales of cull livestock expected
    e. purchase cost of a new pickup
    f. depreciation on milking parlor equipment

11. Indicate which type of budget would be best suited to do the following:
    A. Enterprise budget
    B. Whole farm budget
    C. Cash flow budget
    D. Partial budget

    _____ Estimate the total cost of production per cwt. of milk produced
    _____ Estimate in which month an operating loan can be repaid
    _____ Estimate how many bushels of corn will be available to sell after feed needs of the farm are met
    _____ Estimate the net change in profit that would result from hiring a full-time employee instead of hourly labor
    _____ Estimate the maximum amount of operating credit that will be needed during the year
    _____ Compare the potential gross margins per acre for two competing crops
12. Research trials show the following results from applying increasing levels of irrigation water to a corn crop:

<table>
<thead>
<tr>
<th>Irrigation Water (inches per acre)</th>
<th>Corn Yield (bu. per acre)</th>
<th>Marginal Product</th>
<th>Marginal Revenue</th>
<th>Marginal Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>104</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>117</td>
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<td>129</td>
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<td>16</td>
<td>138</td>
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<td>18</td>
<td>145</td>
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<td>20</td>
<td>149</td>
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<td>22</td>
<td>152</td>
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<td></td>
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<tr>
<td>24</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>147</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Corn is valued at $2.50 per bushel, and irrigation costs are $3.00 per inch of water. Complete the blanks for Marginal Product, Marginal Revenue and Marginal Cost.

Which level of irrigation would maximize profits, if all other costs stay the same? __________ inches

13. Bo Peep buys a prize ram for her flock of 28 purebred ewes, for $1,500. Three years later she sells the ram for mutton and receives $100. How much is her annual cost per “ewe unit” for the sire?

\[ \text{Cost per ewe unit} = \frac{1,500}{28} \]

\[ \approx 53.57 \]

Cost per ewe unit is approximately $53.57.
14. For the enterprise budget below, calculate the following values (per acre):  

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Gross revenue</td>
<td>$___________</td>
</tr>
<tr>
<td>b. Gross margin</td>
<td>$___________</td>
</tr>
<tr>
<td>c. Profit</td>
<td>$___________</td>
</tr>
<tr>
<td>d. Breakeven selling price for total costs</td>
<td>$___________</td>
</tr>
</tbody>
</table>

**COST-RETURN PROJECTION -- CANOLA--CENTRAL KANSAS**

**1,500 lbs. per acre**

**VARIABLE COSTS PER ACRE:**

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Labor</td>
<td>$23.76</td>
</tr>
<tr>
<td>2. Seed</td>
<td>10.00</td>
</tr>
<tr>
<td>3. Herbicide</td>
<td>7.50</td>
</tr>
<tr>
<td>4. Insecticide</td>
<td></td>
</tr>
<tr>
<td>5. Fertilizer and Lime</td>
<td>15.80</td>
</tr>
<tr>
<td>6. Fuel and Oil</td>
<td>6.00</td>
</tr>
<tr>
<td>7.</td>
<td></td>
</tr>
<tr>
<td>8. Machinery and Equipment Repairs</td>
<td>13.75</td>
</tr>
<tr>
<td>9.</td>
<td></td>
</tr>
<tr>
<td>10. Crop Insurance</td>
<td></td>
</tr>
<tr>
<td>11. Drying</td>
<td></td>
</tr>
<tr>
<td>12. Custom Hire</td>
<td></td>
</tr>
<tr>
<td>13. Crop Consulting</td>
<td></td>
</tr>
<tr>
<td>14. Miscellaneous</td>
<td>7.00</td>
</tr>
<tr>
<td>15. Interest on 1/2 Variable Costs</td>
<td>3.77</td>
</tr>
</tbody>
</table>

A. TOTAL VARIABLE COSTS $87.58

**FIXED COSTS PER ACRE:**

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. Real Estate Taxes</td>
<td>3.18</td>
</tr>
<tr>
<td>17. Interest on Land</td>
<td>38.16</td>
</tr>
<tr>
<td>18. Rent for Rented Land</td>
<td></td>
</tr>
<tr>
<td>19. Depreciation on Crop Machinery</td>
<td>14.63</td>
</tr>
<tr>
<td>20. Interest on Crop Machinery</td>
<td>13.67</td>
</tr>
<tr>
<td>21.</td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td></td>
</tr>
<tr>
<td>23. Insurance on Machinery</td>
<td>0.56</td>
</tr>
</tbody>
</table>

B. TOTAL FIXED COSTS $70.20

C. TOTAL COSTS (A + B) $157.78

D. YIELD PER ACRE--LBS. 1,500

E. PRICE PER LB. $ .10

F. NET GOVERNMENT PAYMENT $12.99
15. a. At present you are raising 80 acres of alfalfa hay per year with an average yield of 4 tons per acre and paying a custom operator $.40 per bale to bale it in small square bales, weighing 75 pounds each. How much are you paying in total? Show your work. (4 points)

b. You can buy your own large round baler for $20,000. Assume a 10-year life, 20% salvage value, a 6% interest rate and 1% of average value for insurance and housing. You calculate that variable costs will be $3 per acre, for fuel, repairs, and twine. Baling takes you about 50 hours total, valued at $8 per hour. Show each of the long-run ownership and operating costs for the baler, in dollars per year for 80 acres. Show your work. (10 points)

(1) Depreciation

$__________

(2) Interest

$__________

(3) Insurance and housing

$__________

(4) Variable costs

$__________

(5) Labor

$__________
Budgeting

1. D
2. D
3. A
4. C
5. A
6. B
7. D
8. B
9. A, C, D
10. B, C, D, E
11. A, C, B, D, C, A
12. | Marginal Product | Marginal Revenue | Marginal Cost |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>32.50</td>
<td>6.00</td>
</tr>
<tr>
<td>12</td>
<td>30.00</td>
<td>6.00</td>
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<tr>
<td>9</td>
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<td>6.00</td>
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<td>6.00</td>
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<td>10.00</td>
<td>6.00</td>
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<tr>
<td>3</td>
<td>7.50</td>
<td>6.00</td>
</tr>
<tr>
<td>1</td>
<td>2.50</td>
<td>6.00</td>
</tr>
<tr>
<td>-6</td>
<td>-15.00</td>
<td>6.00</td>
</tr>
</tbody>
</table>
22 inches

13. \[
\frac{1,500 - 100}{28 \text{ ewes} \times 3 \text{ years}} = 16.67 \approx 16.7\text{ ewe/yr.}
\]

14. a. \(1,500 \text{ lb.} \times \$0.10/\text{lb.} + 12.99 = 162.99\)
   b. \(162.99 - 87.58 = 75.41\)
   c. \( 75.41 - 70.20 = 5.21\)
   d. \((157.78 - 12.99)/1500 = 0.096/\text{lb.}\)

15. a. \(0.40 \text{ /bale} \times \frac{1 \text{ bale}}{75 \text{ lb}} \times \frac{2,000 \text{ lb}}{1 \text{ ton}} \times 4 \frac{\text{ ton}}{\text{ acre}} \times 80 \text{ acres} = 3,413\)
   b. Salvage value = \(20,000 \times 20\% = 4,000\)
      (1) \((20,000 - 4,000)/10 \text{ years} = 1,600\)
      (2) Average value = \(\frac{20,000 + 4,000}{2} = 12,000\)
      \(12,000 \times 6\% = 720\)
      (3) \(12,000 \times 1\% = 120\)
      (4) \(3.00/\text{acre} \times 80 \text{ acres} = 240\)
      (5) \$8.00/hr \times 50 \text{ hours} = 400\)